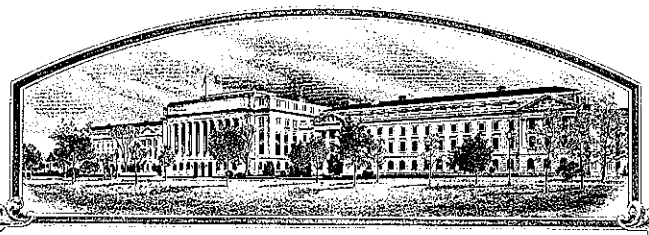
No. 9600084



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Busch Agricultural Resources, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'B3213'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of April in the year of our Lord one thousand nine hundred and ninety-six.

Attest:

Marsha A. Stanton
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Dan Glickman
Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
BUSCH AGRICULTURAL RESOURCES, INC.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
6B88-3213

3. VARIETY NAME
'B3213' per Letter 4/16/96 mah

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
3515 EAST COUNTY ROAD
FT. COLLINS, CO 80524 U.S.A.

6. TELEPHONE *(include area code)*
(970) 221-5622

6. FAX *(include area code)*
(970) 482-5965

FOR OFFICIAL USE ONLY

PVPO NUMBER: 9600084

FILING DATE: Dec 13, 1995

FEES RECEIVED — FILING AND EXAMINATION FEE: $ 2450.00 DATE: Dec 13, 1995

CERTIFICATION FEE: $ 260.00 DATE: 2-20-96

7. GENUS AND SPECIES NAME
HORDEUM VULGARE L.

8. FAMILY NAME *(Botanical)*
GRAMINEA

9. CROP KIND NAME *(Common name)*
SPRING BARLEY

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*
CORPORATION

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
DELAWARE

12. DATE OF INCORPORATION
01/01/81

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
DR. LES WRIGHT
BUSCH AGRICULTURAL RESOURCES, INC.
3515 EAST COUNTY ROAD 52
FT. COLLINS, CO 80524

(OR)

DR. MIKE BJARKO
SAME ADDRESS &
PHONE #

14. TELEPHONE *(include area code)*
(970) 221-5622

15. FAX *(include area code)*
(970) 482-5965

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of the Variety
d. ☒ Exhibit D, Additional Description of the Variety
e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository)*
g. ☒ Filing and Examination Fee ($2,460), made payable to "Treasurer of the United States" *(Mail to PVPO)*

H. QUALITY AND AGRONOMIC DATA

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)?*
☐ YES *(If "yes," answer items 18 and 19 below)* ☒ NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ YES *(If "yes," give names of countries and dates)* ☒ NO

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
Mike Bjarko		Leslie J. Wright	
NAME *(Please print or type)*		NAME *(Please print or type)*	
Mike Bjarko		Leslie J. Wright	
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Barley Breeder	11 Dec 95	Research Director	12/11/95

SD-470 (04-95) *(Previous editions are to be destroyed)*

(See reverse for instructions and information collection burden statement)

1

EXHIBIT A

ORIGIN AND BREEDING HISTORY OF ~~6B88-3213~~ 'B3213'

per letter 4/16/96 MAH

PEDIGREE: NDSU bulk selection/M30//Robust/3/B1602

DATE OF CROSS: 1985

HISTORY: The selection 6B88-3213 originated in Moorhead, Minnesota as an F4 headrow. It was first tested in replicated yield trials in 1988 at Moorhead and Climax, MN. The selection was entered in the Mississippi Valley Uniform Regional Barley Nursery 1993 through 1995. It is targeted as a six-rowed malting barley for midwestern barley production. Head selections were made in 1991 to initiate purity and multiplication. In 1992 headrows were bulked for Breeder seed. Breeder seed was produced in 1995. Certified seed will be available in 1998.

9600084

AMENDMENT TO EXHIBIT A

PV Application No. 9600084, BARLEY, ~~<6B88-3213>~~ 'B3213'

per letter 4/16/96 MAH

PEDIGREE:

NDSU bulk selection/M30//Robust/3/B1602

NDSU bulk selection consisted of experimental breeding lines derived from commonly grown 6-row malting varieties common to the upper midwest barley growing region from the six- row breeding program at North Dakota State University in 1976.

M30 was an experimental line developed by the University of Minnesota an entered in the Uniform Mississippi Valley Barley Nursery in 1976. Parentage of M30 is M18/M14.

Experimental lines entered in the Uniform Mississippi Valley Barley Nursery are readily available for use in breeding programs.

6B88-3213 is uniform and stable over ten years and eleven generations. Less than .5% of the plants were rogued from Breeder fields in 1995. Approximately 95% of the rogued variant plants were 2-4 centimeters taller than 6B88-3213. Less than .5% total variant plants may be encountered in subsequent generations.

Selection criteria used to breed 6B88-3213 is as follows:

Midwestern Six-rowed Barley:

Yield:	Greater than Stander
Maturity:	Equal to or earlier than Stander
Straw strength:	Equal to or greater than Stander
Kernel plumpness:	Equal to or greater than Stander
Protein:	Equal to or less than Morex
Diastatic power:	Equal to or greater than Morex
Extract:	Equal to or greater than Morex
Alpha amylase:	Equal to Morex
Viscosity:	Equal to or less than Morex
Turbidity:	Equal to or less than Morex

EXHIBIT B

STATEMENT OF DISTINCTNESS

per letter 4/16/96 mail

'B3213'

~~6B88-3213~~ is most similar to the spring barley variety "B1602", however it can be distinguished by the following morphological characteristics.

- 6B88-3213 has semi-smooth lemma awns.
  B1602 has rough lemma awns.

AMENDMENT TO EXHIBIT B

per letter 4/16/96 MAH

PV Application No. 9600084, BARLEY, <~~6B88-3213~~> B3213

We have compiled statistical differences between B1602 and 6B88-3213 for percentage of plump kernels, protein and difference in diastatic power. Please see attached pages. Also, 6B88-3213 has short rachilla hair and the rachilla hair of B1602 is long.

9600084

PV Application No. 9600084, Barley <~~6B88-3213~~> 'B3213'

Per Letter 4/16/96 MAH

STATISTICAL TABLE FOR PERCENT PLUMP

VARIETY	MEAN	SD	DIFF	N	t	p
3213	77.51	11.503	18.272	18	4.0673	0.001
B1602	59.24	17.648				

STATISTICAL TABLE FOR PERCENT PROTEIN

VARIETY	MEAN	SD	DIFF	N	t	p
3213	13.15	0.91	0.66	17	2.13	0.05
B1602	12.50	0.96				

STATISTICAL TABLE FOR DP

VARIETY	MEAN	SD	DIFF	N	t	p
3213	183.55	22.86	28.82	17	4.64	0.0003
B1602	154.74	17.97				

Key:
SD - Standard Deviation
DIFF - The difference between the parameter for 3213 and B1602.
N - The number of observations
t - The t value from Student's t statistic
p - The probability value associated with the t value

9600084

PV Application No. 9600084, Barley <~~6B88-3213~~> 'B 3213'

per letter 4/16/96 MAH

CL	YR	REG	LO	TRL	ENTRY	PLUMP	PROT	DP
6	95	MW	BT	6301	6B88-3213	83.6	13.3	168
6	95	MW	MH	6301	6B88-3213	68.3	13.7	157
6	95	MW	TM	6301	6B88-3213	92.9	14.9	189
6R	94	MW	BT	6301	6B88-3213	78.8	13.5	194
6R	94	MW	CK	6301	6B88-3213	47.7		
6R	94	MW	MH	6301	6B88-3213	78.1	12.7	165
6R	94	MW	SU	6301	6B88-3213	78.6	14.2	191
6R	94	MW	TM	6301	6B88-3213	91.2	13.1	190
6R	94	MW	CK	6302	6B88-3213	64.9		
6R	94	MW	MH	6302	6B88-3213	68.7	13.0	163
6R	94	MW	SU	6302	6B88-3213	79.5	13.5	223
6R	94	MW	TM	6302	6B88-3213	90.0	14.4	179
6R	94	MW	MH	6303	6B88-3213	81.6	13.4	163
6R	94	MW	MH	6304	6B88-3213	68.9	13.0	167
6R	92	MW	CK	6301	6B88-3213	68.1	12.0	230
6R	92	MW	MH	6301	6B88-3213	89.4	12.1	205
6R	92	MW	SU	6301	6B88-3213	77.7	12.8	204
6R	92	MW	TM	6301	6B88-3213	87.2	12.9	182
TC	92	MW	SU	6301	6B88-3213		11.2	151
					COUNT	18	17	17
					AVE	77.5	13.2	183.55
					p=	0.001	0.049	0.0003
					T	4.07	2.13	4.6368
					SD	11.5	0.91	22.858
6	95	MW	BT	6301	B1602	57.4	12.2	141
6	95	MW	MH	6301	B1602	47.6	12.9	144
6	95	MW	TM	6301	B1602	74.8	14.7	172
6R	94	MW	BT	6301	B1602	68.8	13.3	169
6R	94	MW	CK	6301	B1602	43.9		
6R	94	MW	MH	6301	B1602	48.3	11.7	142
6R	94	MW	SU	6301	B1602	77.0	14.2	180
6R	94	MW	TM	6301	B1602	84.4	11.8	152
6R	94	MW	CK	6302	B1602	42.0		
6R	94	MW	MH	6302	B1602	37.0	12.6	152
6R	94	MW	SU	6302	B1602	71.3	12.7	199
6R	94	MW	TM	6302	B1602	81.5	13.2	144
6R	94	MW	MH	6303	B1602	49.4	12.1	136
6R	94	MW	MH	6304	B1602	48.4	12.3	134
6R	92	MW	CK	6301	B1602	26.5	11.6	170
6R	92	MW	MH	6301	B1602	87.0	11.6	147
6R	92	MW	SU	6301	B1602	56.9	11.4	142
6R	92	MW	TM	6301	B1602	64.1	12.9	163
TC	92	MW	SU	6301	B1602		11.4	142
					COUNT	18	17	17
					AVE	59.2	12.5	154.74
					SD	17.6	0.96	17.966

9600084

PV Application No. 9600084, Barley <~~6B88-3213~~> 'B3213' per letter 4/16/96 MAH

Key:

CL - Class, 2 or 2R means two rowed barley, 6 or 6R means six rowed barley
YR - Year the data were gathered: 95=1995 94=1994, 93=1993, 92=1992
REG - Region the crop was grown. MW refers to the midwest region
LO - Location the crop was grown: CK=Crookston,MN;
MH=Moorhead,MN; SU=Sutton,ND; TM=St.Thomas,ND;
BT=Bottineau,ND.
TRL - Trial, the experiment number the variety was grown in.
ENTRY - The name assigned to the genotype for testing
PLUMP - The percent plump
PROT - The percent protein
DP - Diastatic power
COUNT - The number of observations
AVE - The mean of the data values
p - The probability value associated with the t value
T - The t value from Student's t statistic
SD - The standard deviation of the data values

FORM APPROVED: OMB NO. 40-R3822

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Barley)

OBJECTIVE DESCRIPTION OF VARIETY
BARLEY *(HORDEUM VULGARE)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
BUSCH AGRICULTURAL RESOURCES, INC.

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
3515 EAST COUNTY ROAD 52
FT. COLLINS, CO 80524

FOR OFFICIAL USE ONLY
PVPO NUMBER 9600084
VARIETY NAME OR TEMPORARY DESIGNATION ~~6B88-3213~~ B-3213

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (i.e. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

[1] 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER

[3] Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT

2. MATURITY (50% Flowering):

[2] 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier)

[ ] No. of days *Earlier* than ..... [ ]
[2] No. of days *Later* than ..... [8]

1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8 = MOREX

3. PLANT HEIGHT (From soil level to top of head):

[3] 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest)

[0][9] Cm. *Shorter* than ..... [8]
[ ][ ] Cm. *Taller* than ..... [ ]

1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8 = MOREX

4. STEM:

[3] Exertion *(Flag to spike at maturity)*: 1 = 0 - 3 cm. 2 = 3 - 10 cm. 3 = 10 - 15 cm.

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[0][5] NO. OF NODES (Originating from node above ground)

[4] Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN 4 = MODIFIED CLOSED OR OPEN

[3] Shape of Neck: 1 = STRAIGHT 2 = SNAKY 3 = OTHER (Specify) SLIGHTLY SNAKY

5. LEAF:

[1] Basal leaf sheath *(seedling)*: 1 = GLABROUS 2 = PUBESCENT

[2] Position of flag leaf *(at boot stage)*: 1 = DROOPING 2 = UPRIGHT

[1] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY

[2][1] MM. WIDTH (First leaf below flag leaf)

[2][3] CM. LENGTH (First leaf below flag leaf)

[1] Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

6. HEAD:

[2] Type: 1 = TWO-ROWED 2 = SIX-ROWED

[1] Density: 1 = LAX 2 = ERECT (Not dense) 3 = ERECT (Dense)

[2] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[2] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY

[2] Lateral Kernels Overlap: 1 = NONE 2 = AT TIP 3 = 1/4 - 1/2 OF HEAD

[2] Rachis *(Hair on edge)*: 1 = LACKING 2 = FEW 3 = COVERED

7. GLUME:

[2] Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA 3 = MORE THAN 1/2 OF LEMMA

[2] Hairs: 1 = NONE 2 = SHORT 3 = LONG

[3] Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED

[3] Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES 3 = MORE THAN EQUAL TO LENGTH OF GLUMES

[3] Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

9

8. LEMMA:

[5] Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS 3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike) 5 = LONG (longer than spike) 6 = HOODED

[3] Awn Surface: 1 = AWNLESS 2 = SMOOTH 3 = SEMISMOOTH 4 = ROUGH

[3] Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS

[1] Hair: 1 = ABSENT 2 = PRESENT

[1] Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE 3 = TRANSVERSE CREASE

[1] Rachilla Hairs: 1 = SHORT 2 = LONG

9. STIGMA:

[2] Hairs: 1 = FEW 2 = MANY

10. SEED:

[2] Type: 1 = NAKED 2 = COVERED

[1] Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT

[4] Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.) 4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)

[3] Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED

[1] Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE

[0][0] PERCENT ABORTIVE

[3][9] GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] SEPTORIA	[2] NET BLOTCH	[2] SPOT BLOTCH	[2] POWDERY MILDEW
[0] LOOSE SMUT	[0] BACTERIAL BLIGHT	[0] COVERED SMUT	[0] FALSE LOOSE SMUT
[2] STEM RUST	[2] LEAF RUST	[0] SCAB	[1] SCALD
[0] AY	[0] BSMV	[0] BYDV	[0] OTHER (Specify)

12. INSECT: (0 = Not tested, 1 = Susceptible, 2 = Resistant)

[0] GREEN BUG	[0] ENGLISH GRAIN APHID	[0] CHINCH BUG	[0] ARMYWORM
[0] GRASS HOPPERS	[0] CEREAL LEAF BEETTLE	[0] OTHER (Specify)	

HESSIAN FLY RACES: [0] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] DDT [ ] OTHER (Specify)

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	B1602	Seed size	B1602
Leaf size	B1602	Coleoptile elongation	B1602
Leaf color	B1602	Seedling pigmentation	B1602
Leaf carriage	B1602		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

10

EXHIBIT D

BOTANICAL DESCRIPTION OF ~~6B88-3213~~ 'B3213'

Per letter 4/16/96 MAH

6B88-3213 is a six-rowed, early maturing spring barley bred and developed by Busch Agricultural Resources, Incorporated at Ft. Collins, Colorado. It has excellent straw strength and malting quality.

Juvenile growth habit is erect. Plant color at boot is green with an upright and curled flag leaf. Inclined parallel head is mid-lax in density with a straight to slightly snaky neck. Collar is variable with saucer and cup types. First rachis segment is either long and narrow or short and wide. Base of the first segment is a margin flange. Rachis shape is plain with short hairs sparsely covering the rachis. Kernel overlap is one quarter the length of the spike to the tip. Glume length compared to the kernel is one half the length. Glume hair is short and confined to a band. Glume awns are rough and more than the length of the glume. Lemma awns are longer than the spike and semi-smooth with anthocyanin present at the tips. Seed is covered, mid-long to long, finely wrinkled and waxy. Aleurone is colorless. Lemma base is a depression. Palea tips are long. Rachilla hair is short and sparse. Ventral crease is V-shaped and lacks crease hair. Fence hair is lacking.

6B88-3213 is a Midwestern six-rowed variety well adapted to North Dakota and Minnesota.

EXHIBIT H

AGRONOMIC AND QUALITY DATA

SEE ATTACHED PAGES

6B88-3213

1995 MIDWESTERN SIX-ROWED A.M.B.A. TESTING CANDIDATE

AGRONOMIC SUMMARY

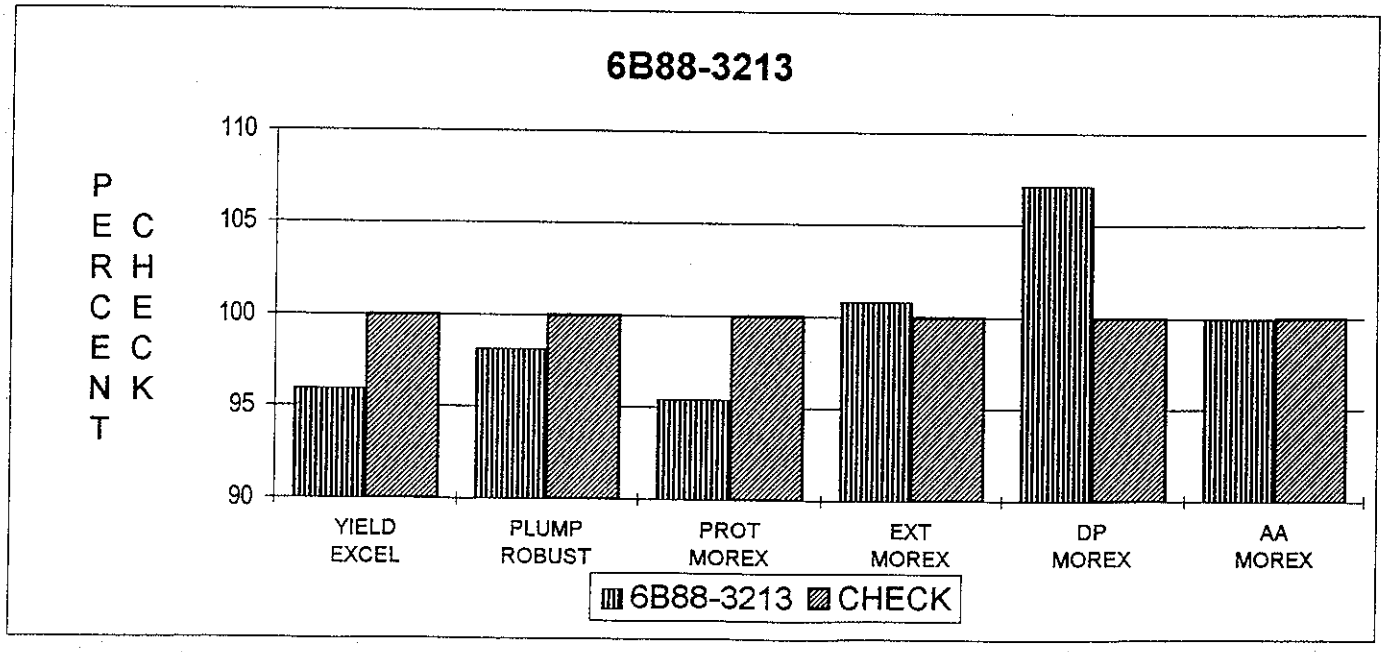
LINE OR VARIETY	YIELD (% EXCEL) (3) 91	(4) 92	(26) 93	(29) 94	(22) 95	(84) AVE	(76) HEAD 1/1	(53) HT CM	(67) LDG 1-9	(67) MAT 1-5	(36) TEST WT	(43) NET BLOTCH	(38) SPOT BLOTCH
per letter 1/16/96 MAH 'B3213' ~~6B88-3213~~ →	95	95	101	96	93	96	181	83	2.1	3.2	48.4	6.1	4.4
EXCEL	100 (58) *	100 (121)	100 (86)	100 (81)	100 (72)	100 (82)	183	85	3.1	3.9	47.5	6.8	4.0
ROBUST	93	91	95	95	93	94	183	91	3.1	3.9	47.9	6.4	4.7

1991-95 DATA, ( ) = STATION YEARS
* BUSHEL / ACRE

QUALITY SUMMARY

LINE OR VARIETY	(27) % PLUMP	(28) MALT PROT	EXTRACT (14) F. GRD	(27) C. GRD	(14) F-C DIF	(14) WORT VIS	(28) S/T	(28) SOL PROT	(28) DP	(28) AA	WORT (3) CLR	(28) TUR
6B88-3213	70.9	13.3	77.9	76.2	1.13	1.45	43.8	5.8	186	66.8	2.1	8
MOREX	58.7	14.0	77.2	75.3	1.73	1.46	44.6	6.2	174	66.8	2.3	8
ROBUST	72.2	14.0	77.7	74.4	2.87	1.50	40.7	5.7	170	50.2	1.9	6

1988-95 DATA, ( ) = STATION YEARS



STATISTICAL TABLE FOR PLANT HEIGHT

VARIETY	MEAN	SD	DIFF	N	t	p
B3213	80.43	6.74	5.25	15	2.16	0.05
B2601	75.18	7.36				

The probability that the difference in means of plant height is significant at the 5% level

STATISTICAL TABLE FOR MATURITY

VARIETY	MEAN	SD	DIFF	N	t	p
B3213	3.06	0.68	-0.65	17	3.60	0.002
B2601	3.71	0.47				

The probability that the difference in means of maturity is significant at the 0.2% level

9600084

EXHIBIT E.

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Busch Agricultural Resources, Incorporated is applicant for protection in this case being:

a). The incorporated business registered in Delaware for and within which regular employees have bred ~~6B88-3213.~~ 'B 3213'

per letter 4/16/96 mat

b). The proprietary owner and intending commercial seller of 6B88-3213.

9600084

AMENDMENT TO EXHIBIT E

PV Application No. 9600084, BARLEY, ~~<6B88-3213>~~ 'B 3213'

per letter 4/16/96 MAH

6B88-3213 is a six-rowed spring barley for which Plant Variety Protection is hereby sought was developed by Dr. Les Wright, an employee of Busch Agricultural Resources, Incorporated. By agreement between employees and Busch Agricultural Resources, Incorporated: all rights to any invention, discovery, or development made by the employee while employed by Busch Agricultural Resources, Incorporated, were assigned to Busch Agricultural Resources, Incorporated with no rights of any kind pertaining to 6B88-3213 being retained by the employee.